

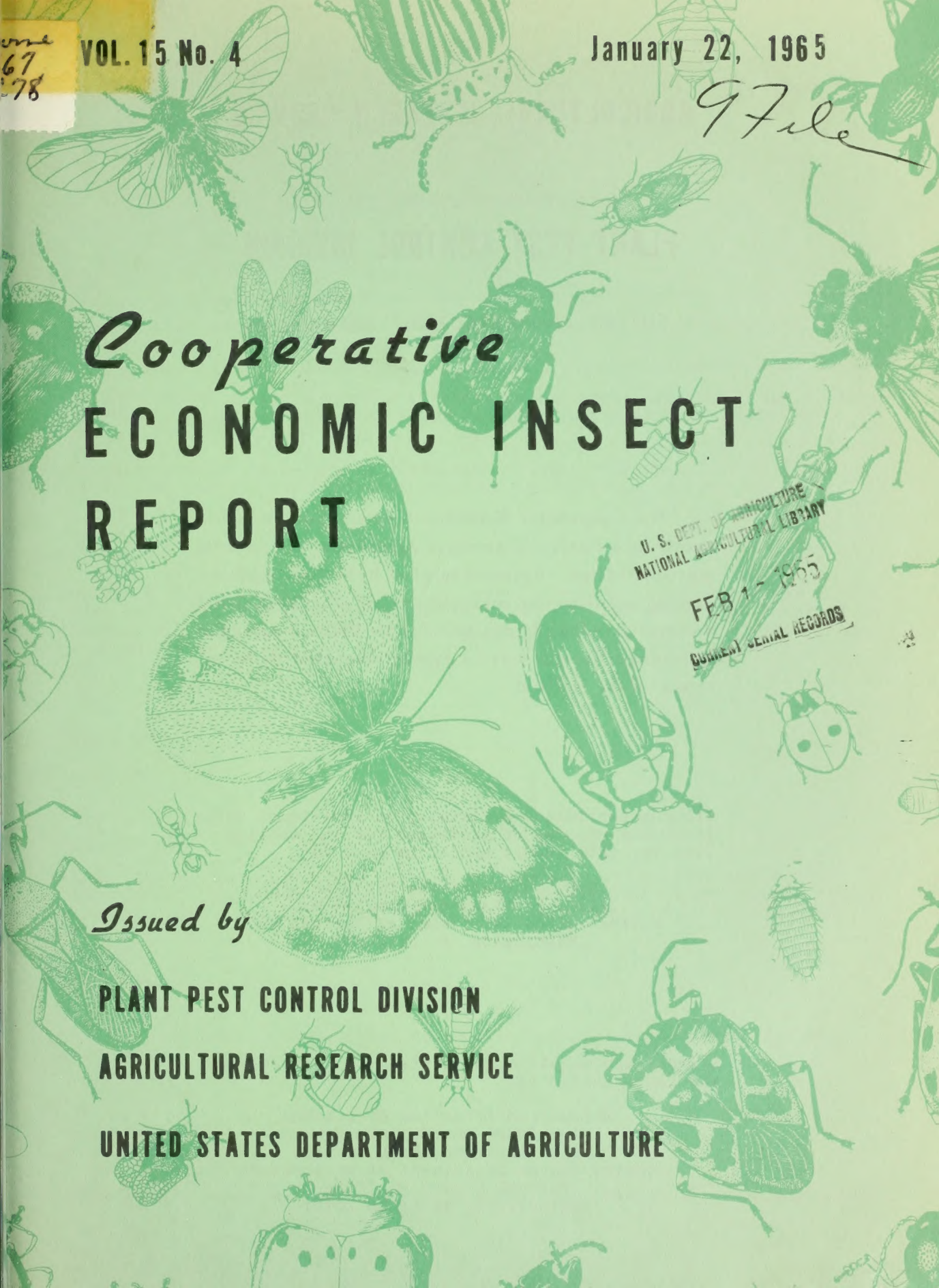
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Cooperative ECONOMIC INSECT REPORT

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SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

GREENBUG and WINTER GRAIN MITE damaging small grains in northwest Texas. (p. 47).

Small ARMY CUTWORM larvae appearing in wheat in southwest Oklahoma. Egg clusters of a WEEVIL (Hypera brunneipennis) heavy on alfalfa on Yuma Mesa in Arizona. (p. 47).

LONE STAR TICK light on cattle in Pushmataha County, Oklahoma; this is first report of year and at least one month earlier than usual. (p. 50).

DETECTION

AN ICHNEUMON (Bathyplectes curculionis), larval parasite of alfalfa weevil, reported for first time from Illinois. This parasite has never been released in the State. (p. 51). An ARMORED SCALE (Unaspis citri), infesting Hamlin orange grove at Fort Pierce, is a new county record for St. Lucie County, Florida. (p. 48).

CORRECTIONS

See page 51.

SPECIAL REPORTS

Quarterly Citrus Insect and Mite Outlook in Florida - January through March. (p. 48). YELLOW SCALE (Aonidiella citrina) and an ARMORED SCALE (Unaspis citri) will continue above normal levels; these will appear in groves not heretofore infested.

Status of the Screw-worm in the Southwest. (p. 53).

Survey for Abundance of Forage Crop Insects in Western Massachusetts in 1964. (pp. 54-56).

Reports in this issue are for week ending January 15 unless otherwise indicated.

WEATHER BUREAU'S 30-DAY OUTLOOK

MID-JANUARY TO MID-FEBRUARY

The Weather Bureau's 30-day outlook for mid-January to mid-February calls for temperatures to average below seasonal normals over the eastern half of the Nation as well as the southwestern quarter. Above normal averages are anticipated over the Northern Plains and northern portions of the Plateau Region while near normal temperatures are in prospect for unspecified areas. Precipitation is expected to exceed normal from the gulf coast region northeastward through the Atlantic Coast States and also over the southern Rockies and southern portions of the Pacific coast. In the Northeast, much of this precipitation will be in the form of snow. Subnormal amounts are called for over the Northwest as well as over the upper Mississippi Valley. Elsewhere near normal amounts are predicted.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D. C. 20250. Price \$5.00 a year.

WEATHER OF THE WEEK ENDING JANUARY 18

Temperatures averaged above normal from the Pacific Ocean to the western Great Plains while the East experienced the coldest weather in 13 months. Moderate to heavy snow from Illinois to the Atlantic Ocean closed some main highways and many secondary roads.

TEMPERATURE: Temperatures warmed over the Western United States. Montana averaged about 10 degrees warmer than normal after four weeks of continuous cold weather. In contrast, Arctic air began pouring into the northern Great Plains from Minnesota eastward on Monday, January 11. By Saturday night, the cold front had passed Key West, Florida. It brought an end to the warm spell which had lasted three weeks over the Eastern United States. The temperature at International Falls, Minnesota, went below zero on Friday, January 8, and did not rise above zero until Saturday, the sixteenth. At Warroad, Minnesota, the mercury plunged to 45 degrees below zero, one of the coldest temperatures in the Nation. Memphis, Tennessee, registered 4 degrees below zero on Sunday morning, January 17. Subfreezing temperatures occurred along the Gulf of Mexico from Corpus Christi, Texas, to Tampa, Florida. By midnight Sunday, a new cold front was pushing across the Great Plains and stretched from Abilene, Texas, to Lake Erie. It did not lower temperatures much but prevented the areas from warming.

PRECIPITATION: Light precipitation fell over much of the United States during the past week. Totals were generally less than 0.25 inch over the western half of the Nation and less than 0.75 inch over the East. Most of the precipitation fell as snow. Snow, generally 6 inches or more, fell Friday and Saturday from Illinois to the Atlantic Ocean, over the Appalachians and the Piedmont. Some areas in southern Virginia, West Virginia, North Carolina, and Massachusetts received more than 10 inches. The mountain and Piedmont areas in Georgia and South Carolina received 6 inches of snow. The snow blocked roads and highways. When the weekend storm hit the New England Coast, it was accompanied by winds reaching 75 m.p.h. in gusts. Arizona, New Mexico, and much of Kansas, Oklahoma, and Texas received no precipitation or only light sprinkles or snow flurries. (Summary supplied by U.S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (Schizaphis graminum) - OKLAHOMA - Counts ranged 1-3 per linear foot in wheat in Garfield, Major, Wagoner and Mayes Counties, in barley in Major County and in oats in Garfield County. (Okla. Coop. Sur.). TEXAS - Damaging small grains in northwest area of State. (Texas Coop. Rpt., Simmons).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Ranged 1-4 per linear foot in wheat and barley in Major County and in oats in Garfield County. (Okla. Coop. Sur.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Averaged less than 1 per linear foot in wheat in Logan, Kingfisher and Custer Counties. (Okla. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum avenae) - OKLAHOMA - Averaged 1-3 per linear foot in wheat and barley in Major County, and in wheat and oats in Garfield County. Averaged less than 1 per linear foot in wheat in Blaine, Dewey and Custer Counties. (Okla. Coop. Sur.).

ARMY CUTWORM (Chorizagrotis auxiliaris) - OKLAHOMA - Small larvae beginning to appear in wheat in southwest quarter of State. (Okla. Coop. Sur.).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - MISSOURI - Through 1964, this pest had been collected in 41 counties, only 2 of which, Platte and Clay Counties, are north of the Missouri River. A review of survey records shows that the annual northerly migration of this species in the State, in certain years, reached the following west central counties: Bates in 1959, Pettis in 1961, Henry in 1962, Vernon in 1963 and St. Clair in 1964. Survival rate in State is very low. (Houser, Thomas, Peters).

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - Ranged 0-1.5 per linear foot in wheat in Logan, Kingfisher and Custer Counties. (Okla. Coop. Sur.). TEXAS - Damaging small grains in northwest area. (Texas Coop. Rpt., Simmons).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Averaged 10 per square foot in overwintering alfalfa in Choctaw County and 1 per square foot in Major County. None found in alfalfa checked in Payne County. (Okla. Coop. Sur.). ARIZONA - Ranged 70-90 per 100 sweeps on alfalfa in Yuma area, Yuma County. (Ariz. Coop. Sur.).

PEA APHID (Acyrtosiphon pisum) - OKLAHOMA - Averaged 5 per square foot in overwintering alfalfa in Major County and 2 per square foot in Choctaw County. (Okla. Coop. Sur.). ARIZONA - Ranged 100-320 per 100 sweeps in alfalfa on Yuma Mesa. (Ariz. Coop. Sur.). NEW MEXICO - Infestations mostly very light to light in Dona Ana County alfalfa. (N.M. Coop. Rpt.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - NEW MEXICO - Adults noted in most fields of alfalfa in southern Dona Ana County. (N.M. Coop. Rpt.).

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Larvae ranged 20-40 per 100 sweeps in Yuma County alfalfa. (Ariz. Coop. Sur.).

A WEEVIL (Hypera brunneipennis) - ARIZONA - Egg clusters heavy on alfalfa on Yuma Mesa. (Ariz. Coop. Sur.).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - CALIFORNIA - Heavy in lawn locally in Stockton, San Joaquin County. (Cal. Coop. Rpt.).

AN EARWIG (Labidura riparia) - CALIFORNIA - Adults medium in lawn in San Diego, San Diego County. (Cal. Coop. Rpt.).

FRUIT INSECTS

SAN JOSE SCALE (Aspidiotus perniciosus) - ALABAMA - Heavy, isolated infestations on peaches, pears and apples at homes in Lee County. (Bagby).

AN ARMORED SCALE (Unaspis citri) - FLORIDA - Infested 3-year-old Hamlin orange grove at Fort Pierce, St. Lucie County, (Lounds, Jan. 5); this is a new county record. (Fla. Coop. Sur.). All stages severe on bark of sweet orange at Ferndale, Lake County. (Fatic, Jan. 6).

A BARK BEETLE (Xylosandrus compactus) - FLORIDA - Scattered on stem of avocado at Fort Myers, Lee County. (Kelley, Jan. 6).

TWIG GIRDLER (Oncideres cingulata) - ALABAMA - A few twigs of pecan and hickory falling during windy days following girdling by adults during fall. (Barwood).

CITRUS RED MITE (Panonychus citri) - FLORIDA - Adults severe on leaves of 2,000 inspected nursery trees of Persian lime at Goulds, Dade County. (Knowles, Jan. 4).

Quarterly Citrus Insect and Mite Outlook in Florida - January through March

This outlook is based on the assumption that weather beyond the period of the current U.S. Weather Bureau's 30-day outlook will be normal. Therefore, the forecast given below cannot be viewed with the same degree of confidence as those in the "Citrus Insect and Disease Summary" usually released twice each month.

CITRUS RUST MITE (Phyllocoptruta oleivora) population will remain below average in January, then increase to normal in February. Moderate levels will prevail during the period, with about 30 percent of groves developing important infestations. TEXAS CITRUS MITE (Eutetranychus banksi) and CITRUS RED MITE (Panonychus citri) will be at low levels and are not expected to develop damaging infestations except in young groves in scattered locations. SIX-SPOTTED MITE (Eotetranychus sexmaculatus) infestations will appear in late February and continue into April. Fewer than average are expected. GLOVER SCALE (Lepidosaphes gloverii) will continue above normal abundance and will increase in interior of trees. YELLOW SCALE (Aonidiella citrina) and an ARMORED SCALE (Unaspis citri) will continue above normal levels; these will appear in groves not heretofore infested. APHIDS are expected to appear by mid-February and increase to above normal numbers. (W. A. Simanton, (Citrus Expt. Sta., Lake Alfred)).

TRUCK CROP INSECTS

POTATO APHID (Macrosiphum euphorbiae) - CALIFORNIA - Infested lettuce plantings locally in Fresno County. (Cal. Coop. Rpt.).

MELON APHID (Aphis gossypii) - ARIZONA - No treatment and only a few noneconomic populations reported in Yuma area, Yuma County. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Occasional fully grown larva noted on lettuce; no new hatches reported at Yuma, Yuma County. (Ariz. Coop. Sur.).

A LEAF MINER FLY (Liriomyza sp.) - FLORIDA - Caused light to moderate damage to 200 celery plants 12 inches high at Sanford, Seminole County. (Desin).

THRIPS - NEW MEXICO - Light on seedling onion fields in Las Cruces area, Dona Ana County; averaged under 2 per plant in majority of fields. (N.M. Coop. Rpt.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - TEXAS - No new infestations reported; no control action necessary. Evaluation survey underway to provide information on population status. (Texas For. Pest Comm., Dec. Rpt.; Williamson).

BLACK TURPENTINE BEETLE (Dendroctonus terebrans) - TEXAS - Attacks remain constant on National forests in northern Jasper, southeastern Houston and Trinity Counties; 101 trees treated in Jasper County. (Texas For. Pest Comm., Dec. Rpt.; Williamson).

ENGRAVER BEETLES (Ips spp.) - TEXAS - No unusual damage caused by I. avulsus, I. grandicollis and I. calligraphus reported. (Texas For. Pest Comm., Dec. Rpt.; Williamson). CALIFORNIA - I. latidens adults medium on Jeffrey pines in Alturas, Modoc County. (Cal. Coop. Rpt.).

LODGEPOLE NEEDLE MINER ("Recurvaria" milleri) - CALIFORNIA - Heavy infestation of probably this species noted on Jeffrey pines in Snow Valley Recreation Area, San Bernardino National Forest. About 50 trees in 10-acre stand severely affected; infestation appears to be spreading. (R. E. Droege, USFS).

A PSYLLID (Trioza magnoliae) - FLORIDA - Nymphs and galls severe on stem and leaves of redbay tree on farm at Maitland, Orange County. (McLeod).

A MEALYBUG (Pseudococcus obscurus) - CALIFORNIA - Medium on Vanda sp. nursery stock in San Bruno, San Mateo County; infesting Monterey pine (Pinus radiata) in Salinas, Monterey County. (Cal. Coop. Rpt.).

CAMELLIA SCALE (Lepidosaphes camelliae) - TEXAS - Caused locally heavy damage to camellias in Jasper County. (Richardson). NORTH CAROLINA - Infested camellia leaves in Pitt County. (Mount).

TEA SCALE (Florinia theae) - NORTH CAROLINA - Infested camellias in Onslow and Wake Counties. (Mount).

Coccids in Florida - Adults of Coccus elongatus (a soft scale) light on leaves of Chinese fan palm (Livistona chinensis) at Oviedo, Seminole County. (McLeod, Roberts, Desin, Jan. 5). C. hesperidum (brown soft scale) taken on leaves of bloodleaf (Iresine herbstii) at San Mateo, Putnam County. (Graham, Dec. 23, 1964). Phenacoccus gossypii (Mexican mealybug) moderate on stem and leaves of Texas sage (Salvia coccinea) at Naples, Collier County. (Walsh, Nelson, Jan. 6). These are new host records for Florida Division of Plant Industry. (Fla. Coop. Sur.). All stages of Eriococcus araucariae (a dactylopid scale) infesting 25 Norfolk-Island pine trees at West Miami, Dade County. (Swanson, Jan. 5). Ceroplastes floridensis (Florida wax scale) severe on stem and leaves of Ixora sp. in nursery at Fort Lauderdale, Broward County, (Clinton, Jan. 7); all stages moderate on stem of flowering pomegranate in nursery at Citra, Marion County, (Holder, Jan. 7). Phenacaspis cockerelli (a soft scale) adults severe on Butia capitata in nursery at Plymouth and severe on leaves of Strelitzia reginea in nursery at Tangerine, Orange County. (Musgrove, Jan. 6, 7). Florinia theae (tea scale) severe on leaves of Camellia japonica in nursery at Tangerine. (Musgrove, Jan. 7). All stages of Pseudaulacaspis pentagona (white peach scale) moderate on stem of 75 percent of 4,200 Ligustrum sinense in nursery at Leesburg, Lake County. (Bentley, Jan. 8). Adults of Coccus hesperidum severe on 25 Begonia sp. plants in nursery at Plymouth. (Musgrove, Jan. 7). Diaspis echinocacti (cactus scale) adults severe on cactus in nursery at Sanford, Seminole County. (McLeod, Roberts, Jan. 4). Chrysomphalus aonidum (Florida red scale) adults severe on leaves of English ivy at Plymouth. (Musgrove, Jan. 7). Adults of Pseudococcus adonidum (long-tailed mealybug) severe on stem and leaves of 85 percent of 100,000 Nephtytis sp. and 85 percent of 200,000 Scindapsus sp. and Philodendron cordatum inspected in nursery at Elkton, St. Johns County. (King, Jan. 6).

BOXWOOD LEAF MINER (Monarthropalpus buxi) - NORTH CAROLINA - Noted in boxwood in Wake County. (Mount).

SPIDER MITES - CALIFORNIA - Tetranychus sp., probably telarius (two-spotted spider mite), eggs and adults medium on Ligustrum sp. in Orange, Orange County. Eotetranychus sp., probably lewisii, heavy on Poinsettia locally in San Bernardino, San Bernardino County. (Cal. Coop. Rpt.).

A JUNIPER BUD MITE (Trisetacus quadrisetus) - CALIFORNIA - Infested variegated prostrate juniper in Buena Park, Orange County. (Cal. Coop. Rpt.).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (Hypoderma spp.) - OKLAHOMA - H. lineatum (common cattle grub) ranged 1-23 (average 6) on 25 dairy cows checked in Ellis County; ranged 0-10 (average 2.25) on steers checked in Kingfisher County. Reported moderate on cattle in Latimer and Cotton Counties; ranged 1-10 on 25 percent of beef cattle in Bryan County. (Okla. Coop. Sur.). UTAH - Controls applied to 5,000 head of cattle in Uintah County and 1,500 head in Daggett County for Hypoderma spp. (Bendixsen, Knowlton).

CATTLE LICE - UTAH - Controls applied to 9,500 head of cattle in Uintah County. (Bendixsen, Knowlton). OKLAHOMA - Several species moderate on cattle in Cotton, Washita and Pushmataha Counties and light in Bryan County. (Okla. Coop. Sur.). NORTH CAROLINA - Solenopotes capillatus (a biting louse) infested beef cattle on farm in Hertford County. Det. by W. G. Bruce. (Ballentine).

HOG LOUSE (Haematopinus suis) - OKLAHOMA - Moderate on hogs in Stephens County. (Okla. Coop. Sur.).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Ranged 1-5 per head (light) on cattle in Pushmataha County. This is first report of year and at least 1 month earlier than usual. (Okla. Coop. Sur.).

WINTER TICK (Dermacentor albipictus) - OKLAHOMA - Light infestations noted on cattle in Stephens County. (Okla. Coop. Sur.).

A BROWN SPIDER (Loxosceles reclusa) - OKLAHOMA - Found in house in Kay County and in office in Payne County. (Okla. Coop. Sur.).

HOUSEHOLD AND STRUCTURAL INSECTS

ANTS - MARYLAND - Monomorium pharaonis (Pharaoh ant) infesting building in College Park, Prince Georges County. (U. Md., Ent. Dept.). CALIFORNIA - Adults of Pheidole sp. medium and entering home in Modesto, Stanislaus County. (Cal. Coop. Rpt.).

A BARK BEETLE (Pseudopityophthorus pubipennis) - CALIFORNIA - Adults medium in home in Yreka, Siskiyou County, and damaging nylon carpeting in home in Santa Maria, Santa Barbara County. (Cal. Coop. Rpt.).

STORED-PRODUCT INSECTS

HIDE BEETLE (Dermestes maculatus) - NORTH CAROLINA - Damaged hams in meathouse in Alamance County. Det. by D. A. Mount. (Coble).

BENEFICIAL INSECTS

Beneficial Insects in Alabama - Numerous beneficial insects occurring and feeding in home gardens and on shrubs, due to warm days and abundance of prey. Noted in home gardens: COVERGENT LADY BEETLE (Hippodamia convergens); BRACONID WASPS feeding heavily on aphids on collards, cabbages and turnips; a BIG-EYED BUG (Geocoris punctipes) and FLOWER FLY larvae feeding on aphids. (McQueen).

AN ICHNEUMON (Bathyplectes curculionis) - ILLINOIS - Reared from larvae of Hypera postica (alfalfa weevil) collected during May and June 1964 in Effingham, Massac and Pulaski Counties. This is a new State record. This parasitic species has never been released in State. Det. by L. M. Walkley. (Dysart).

A PHYTOSEIID MITE (Amblyseius hibisci) - FLORIDA - Adults extremely numerous on leaves of 50 inspected nursery plants of Troyer citrange at Goulds, Dade County. (Knowles, Jan. 4).

A PARASITIC NEMATODE (Hexamermis sp.) - ILLINOIS - What is possibly H. arvalis was reared from a larva of Hypera postica (alfalfa weevil) collected June 11, 1964, in Massac County. Det. by H. M. Welch. If positive determination is made, this will be a new State record. (Dysart).

CORRECTIONS

CEIR 15(3):38 - Changes in Spellings in Some Scientific Names - Epiblema otosiana and Epiblema otosianum should read Epiblema otiosana and Epiblema otiosanum. This same error appears in Bull. Entomol. Soc. Am. 10(1):30.

LIGHT TRAP COLLECTIONS

LIGHT TRAP COLLECTIONS

	Temperature ° F.	Precipitation (inches)	Type of trap *	Agrilus (black sapwood)	Carpospiza pomonella (codling moth)	Choristoclea (army cutworm)	Scythonea (salt-marsh caterpillar)	Patonia diffusa (wheat head armyworm)	Pellia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Locustiga comitatalis (alfalfa webworm)	Locustiga stigmatalis (garden webworm)	Locustiga stigmatalis (beet webworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Prodenia ornithogalli (yellow-striped armyworm)	Protoparce quinquefasciata (tomato hornworm)	Protoparce sexta (tomato hornworm)	Pseudaleia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Trichoplusia ni (cabbage looper)	
FLORIDA Gainesville 1/11			BL								1													
GEORGIA Tifton 1/7-13	39-71	0.3	BL							0	5							0	0		63	69	19	
TEXAS Brownsville 1/1-7	56-80	0.01	5 BL	20			6		43		31					19	17							

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* BL = blacklight; I = incandescent; MV = mercury vapor; 0 = other
 ** alf. = alfalfa; beet = garden beet and/or sugar beet; cole = cole crops (crucifers); cott. = cotton; FC = field corn; grain = small grains; leg. = legumes (unspecified); lett. = lettuce; pean. = peanut; pepp. = pepper; pot. = potatoes; SC = sweet corn; sol. = solanaceous plants (unspecified); soy. = soybean; TC = truck crops (unspecified or mixed); tob. = tobacco; tom. = tomato.

STATUS OF THE SCREW-WORM (Cochliomyia hominivorax) IN THE SOUTHWEST

During the period January 10-16, one screw-worm case each was reported from Live Oak and Hidalgo Counties, TEXAS. The Republic of Mexico reported 57 cases: 1 each in Durango and Tamaulipas, 4 in Nuevo Leon, 2 in Coahuila, 9 in Chihuahua and 40 in Sonora. No sterile flies were released in New Mexico; 6,534,250 released in Texas, 7,680,000 in Arizona and 56,954,800 in Mexico.

Year	Positive Cases		Negative Cases		Ratio of Positive Cases to 100 Cases Negative	
	Current	Cumulative	Current	Cumulative	Current	Cumulative
Table 1. Comparison of specimens reported during corresponding weeks in 1963 and 1964 in Southwestern Eradication Area.						
1963	51	82	15	69	340.00	118.84
1964	0	0	26	78	0.00	0.00
1965	2	3	63	192	3.17	1.56

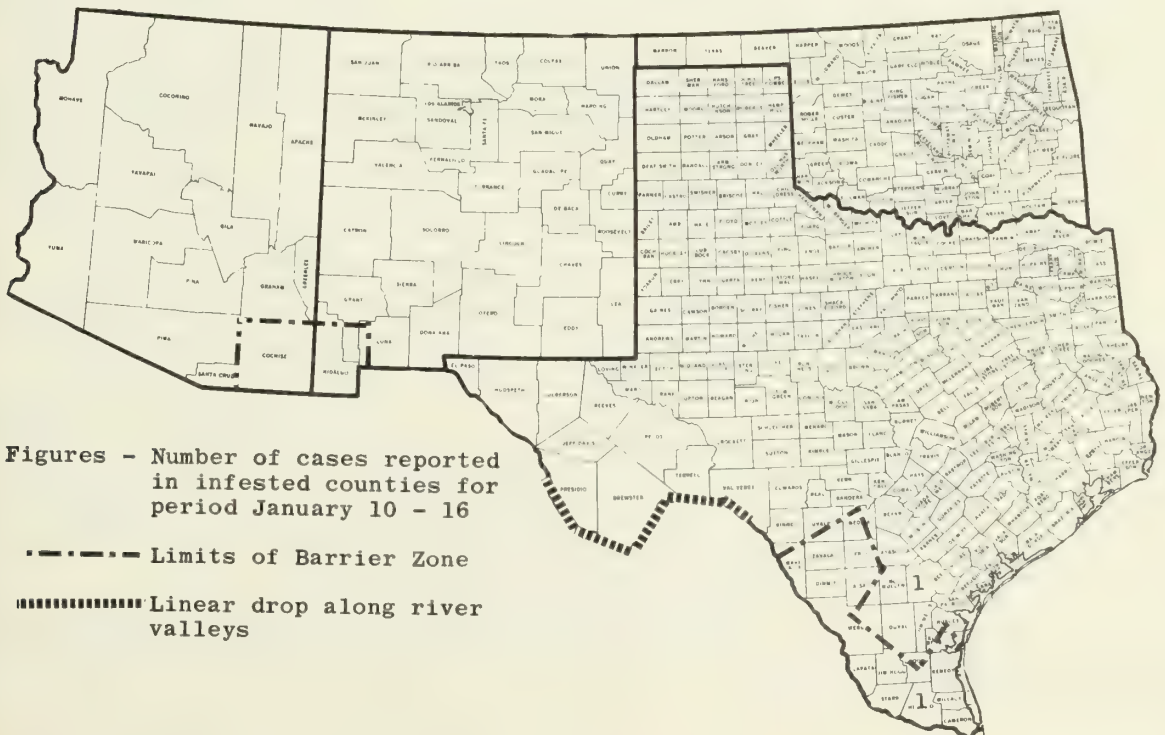
Table 1. Comparison of specimens reported during corresponding weeks in 1963 and 1964 in Southwestern Eradication Area.

Table 2. Comparison of specimens reported during corresponding weeks and in a corresponding area in 1964 in the United States-Mexico Barrier Zone.*						
1964	8	54	13	28	61.53	192.85
1965	57	143	61	108	93.44	132.40

Table 2A. Mexican portion of Barrier Zone only.

1964	5	51	5	11	100.00	463.63
1965	56	141	44	65	127.27	216.92

* Barrier Zone - Area in which screw-worm eradication operations are being carried out in an effort to prevent establishment of self-sustaining screw-worm population in the United States. (Anim. Dis. Erad. Div.).



Survey for the Abundance of Forage Crop Insects
in Western Massachusetts in 1964

F. R. Shaw, R. A. Callahan and F. R. Holbrook

During the growing season of 1964, collections of insects from fields of alfalfa or alfalfa mixtures were made systematically in Berkshire, Hampshire and Hampden Counties, with a few collections made in Franklin and Worcester Counties. Sampling was done from April 27 to November 24. Each sample consisted of 100 sweeps with a 15-inch sweep net. A total of 111,817 insects was collected and identified.

A report of forage crop insect abundance during the spring of 1964 was published in CEIR 14(41):1136-1137. The present summary includes all of the insects collected and identified during the 1964 season. The summarized data appear in Table I.

During the period 1958-1961, distribution of forage crop insects for the entire seasons was determined. These have been averaged, and a comparison of this average with the abundance for 1964 appears in Table II.

From these data, it is obvious that aphids, primarily pea aphid (Acyrtosiphon pisum), were less abundant than in 1964. Pea aphid did not increase in early season as usual. Most of the aphids were collected after June 20.

Plant bugs were less abundant in 1964 than previously. Tarnished plant bug (Lygus lineolaris) was most numerous. Large populations of Plagiognathus politus, rapid plant bug (Adelphocoris rapidus) and Halticus spp. did not materialize in 1964.

Leafhopper numbers were about equal to the average for 1958-1961. Potato leafhopper (Empoasca fabae) was not as abundant in the early part of the season, up to June 20, but had reached normal abundance by fall. Errastunus ocellaris continued abundant in the western portion of State. Six-spotted leafhopper (Macrostelus fascifrons) was not as abundant in 1964 as previously.

Beetles, primarily alfalfa weevil (Hypera postica), showed a marked increase, amounting to almost 30 percent of the total in comparison with an average of 3.1 for the 1958-1961 period. Alfalfa weevil caused moderate to severe damage to most untreated fields in western Massachusetts during 1964.

Spittlebugs were slightly less abundant than usual in 1964 and somewhat spotty in distribution. Largest populations occurred in southern Berkshire County.

Lepidoptera were about as abundant in 1964 as during the 1958-1961 period although alfalfa caterpillar (Colias eurytheme) was less abundant. Orthoptera were less abundant than usual in 1964; however, appreciable numbers occurred in some fields, particularly during late summer. Beneficial insects were less numerous than in other years. This may be related to low aphid populations, particularly in early season.

In addition to surveys of populations of insects attacking alfalfa and alfalfa-grass mixtures, observations were made on oviposition by alfalfa weevil. These results appear in Table III. It should be noted that observations were made in the same field in 1963 and 1964. Observations were continued over a longer period in 1964 than in 1963; however, during October and early November, dates of collection were essentially the same for both years.

It is evident that there was much less oviposition in the fall of 1964 than during the same period in 1963. In the comparable periods, 670 eggs were deposited in 1963 compared with 40 in 1964.

Counts were made of weevils collected from the same field to determine if there was a relationship between weevil abundance and oviposition. Data showed that during the period September 24 to November 19, 1963, approximately 1,760 specimens (all stages) and 400 adults were collected.

In 1964, during period September 22 to November 24, totals of 122 specimens of all stages and 42 adults were collected. Hence, there were definitely fewer adults in this field in 1964. Reasons for this difference are not known. It appears that migration from aestivation quarters to alfalfa in the fall of 1964 was minimal in comparison with that of 1963.

Table I - Abundance of Forage Crop Insects in Western Massachusetts, 1964

<u>Insect Name or Group</u>	<u>Percent</u>	
	<u>Of Group</u>	<u>Of Total</u>
Aphids		49.4
Plant bugs:		5.2
<u>Lygus lineolaris</u>	64.6	
<u>Adelphocoris lineolatus</u>	11.1	
<u>Trigonotylus ruficornis</u>	10.5	
<u>Leptopterna dolabratus</u>	5.4	
<u>Megaloceraea recticornis</u>	1.9	
Others	6.9	
Leafhoppers:		10.1
<u>Empoasca fabae</u>	20.9	
<u>Endria inimica</u>	17.4	
<u>Aceratagallia sanguinolenta</u>	17.1	
<u>Errastunus ocellaris</u>	16.8	
<u>Macrosteles fascifrons</u>	7.9	
<u>Aphrodes costata</u>	6.5	
<u>Doratura stylata</u>	4.5	
Others	8.8	
Beetles:		29.8
<u>Hypera postica</u>	97.7	
<u>Sitona hispidula</u>	1.1	
Elaterids	0.7	
Others	0.5	
Spittlebugs		1.3
Lepidoptera		0.7
Orthoptera		0.3
Beneficial Arthropods:		2.7
Coccinellids (lady beetles)	33.1	
Spiders and harvestmen	30.3	
Damsel bugs	27.4	
Green lacewings	4.6	
Syrphids	3.4	
<u>Orius</u> spp. (flower bugs)	1.2	

Table II - Abundance of Forage Crop Insects in Massachusetts

Group	Average 1958-1961 Percent	Incidence 1964 Percent
Aphids	60.6	49.4
Plant bugs	13.3	5.2
Leafhoppers	10.7	10.1
Beetles	3.1	29.8
Spittlebugs	1.7	1.3
Lepidoptera	0.6	0.7
Orthoptera	1.3	0.3
Sawflies	0.3	0.2
Beneficial insects	3.6	2.7
Miscellaneous insects	1.7	0.3

Table III - Alfalfa Weevil Oviposition, New Marlboro, Massachusetts, 1963 and 1964

1963			1964		
Date	Number of Punctures	Number of Eggs	Date	Number of Punctures	Number of Eggs
-----			Sept. 22	2	12
Oct. 2	45	225	Oct. 1	3	0
Oct. 17	38	90	Oct. 15	2	0
Oct. 24	37	81	Oct. 22	2	0
Oct. 31	63	93	Oct. 29	5	40
Nov. 10	69	151	Nov. 11	4	0
-----			Nov. 19	6	40
-----			Nov. 24	4	16
Total punctures = 252			Total punctures = 16		
Total eggs = 670			Total eggs = 40		
} Oct. 2 - Nov. 10			} Oct. 1 - Nov. 11		

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